16 April 1957

MEMORANDUM FOR: THE RECORD

SUBJECT : Conference Regarding Silencing Robot Camera; Features K-100, 16mm Motion Picture Camera; [redacted] 35mm Time Lapse Camera. 25X1

1. Time and Place: April 10th, 1957 - Office APD.

2. Attendance:

[redacted] 25X1

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3. Purpose: To correlate tasks and problems now in progress by the manufacturer, and exchange ideas between APD, PSD. 25X1

4. Discussion: [redacted] arrived from [redacted] and reported to APD, on or about noon. He brought with him one K-100 camera. The unit is about 100% complete, except for a few minor additions. The camera will be on display by APD. during the week 15th - 19th April 1957. It will be returned to [redacted] after April 22nd 1957, for completion. 25X1 25X1

The features of this camera, equipped with an automatic iris diaphragm were explained by [redacted] to the group. 25X1

He pointed out that the automatic iris was synchronized to operate only when the camera was running at 16; 24; 32; 48; or 64 frames per second.

The automatic iris can be indexed for film speeds 50; 100; 200; and 400 A.S.A.

During the present meeting [redacted] indicated that the K-100 could not be used for making one picture at a time. Commonly referred to as "Stop Motion." This is obvious because Eastman did not design it with this feature. It requires at least one second to get the camera in motion, and also for the automatic iris to properly compensate for existing light level. During the one second period, at least forty pictures are made. 25X1

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The camera, with the automatic iris, met the requirements intended and everyone seemed satisfied.

The next item discussed was the 35mm time lapse camera. [redacted] brought with him an artist's sketch which outlined the vari us features for which the camera was designed. These features were previously outlined to [redacted] and at that time he suggested adding another series of time lapse sequences to include minutes. This additional requirement was feasible to meet before the camera was sent to the shop for fabrication. It was generally agreed between the group, that this camera had all the features necessary and we would not delay or complicate the unit by adding anymore suggested ideas. 25X1 25X1

The next item under discussion is the modified Leica [redacted] Camera. Again [redacted] used an artist's drawing showing how the camera [redacted] and how it is used. 25X1 25X1 25X1

Several commercial and good engineered cameras were obtained and analyzed to determine which one could best be modified. It was determined after study, that the Leica offered the most practical solution, for several reasons.

1. The shutter could be silenced.

2. The lens could be relocated by using a prism arrangement.

3. The camera is reliably and readily available.

4. The thin width of camera body reduces the problem [redacted] 25X1

5. The cost of modification is low compared to designing and building a new camera to do the same thing.

It was agreed that the Leica could be developed and used for operational requirements.

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The next item discussed in theory was quieting the shutter and gear mechanism in the Robot Camera.

[redacted] did not seem too concerned about the problem of quieting the shutter. 25X1

He pointed out several ways shutter noise can be reduced to a minimum. The major problem, however, is to eliminate the whine of high speed gears.

When these gears are suddenly released, they are driven by a strong and stiff conical spring. This spring rotates a train of small gears, [redacted] AT high speed.

The camera is designed to make single pictures rapidly by pushing a button. It is possible to make from five to six shots a second.

[redacted] said that by eliminating the gears incorporated for 1/1000th of a second, and by reducing the number of pictures to possibly three a second, most of the whine would eliminate itself. Whatever audible whine remaining, could further be reduced by a dampening governor, and floating the gear train on the camera today. The possibility of replacing the conical spring, which varies in tension, and using the "NEGATOR" spring which applies a constant torque may also help overcome whine. 25X1

It was agreed that every effort be exploited to eliminate all noise, if possible, on the Robot Camera.

The conference then came to a close. We thanked [redacted] for coming to Washington to discuss these problems. 25X1

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Distribution:
1-AH-31
1-AH-33
1-P-167D
1-P-125D
1-Chrono

TSS/APD/[redacted] -3- 25X1